

REMARKS

This application pertains to a novel process for preparing a polyacrylate having an at least bimodal molecular weight distribution, and to a polyacrylate obtained by such process.

Claims 1-13 are pending.

Applicants' claims pertain to a process for preparing a polyacrylate having an at least bimodal molecular weight distribution, wherein a monomer mixture is first reacted in a first phase polymerization to produce a first polymer but, before the monomer mixture has been completely consumed in this first phase polymerization, a regulator is added to start a second phase polymerization and form a second polymer which has a lower molecular weight than the first polymer formed.

Thus the second phase polymerization uses monomers that remain from the original monomer mixture used for the first polymerization, but were not yet consumed by the first polymerization by the time the regulator is added. In essence, two different polymers are formed from one initial charge of monomer mixture simply by adding a regulator to the reaction mixture before the initial monomer mixture is completely consumed by the first polymerization. This is a very elegant way to obtain a mixture of two or more polymers!

Claims 1, 3, 4, 6, 7, 9 and 11 stand rejected under 35 U.S.C. 102(a) as anticipated by (Brahm et al U.S. Patent 6,001,931).

The Brahm process is very different and nowhere near as elegant as Applicants'. In the Brahm process, two completely separate monomer mixtures are used and two completely separate polymerizations are conducted, even though they may be carried out in "one pot". Thus, in the so-called "first phase", Brahm reacts a monomer mixture to form a high molecular weight polymer (column 4, first paragraph). Then, Brahm **adds a second monomer mixture, different from the first,** to the polymer (i.e., not monomer mixture)/solvent mixture from the first polymerization and polymerizes it in this mixture as a reaction media.

Brahm does not conduct two or more stages of polymerization from a single initial monomer charge, but rather appears to complete a first polymerization, and then **adds more monomer and initiator** and conducts a second polymerization using the polymer/solvent mixture produced in the first polymerization as a reaction media. Note Brahm's Example 1, wherein a first monomer mixture of his "part 1, part 2 and ¼ of part 4" monomers are polymerized, and then a second monomer mixture of the remainder of his part 4 monomers are added and a second polymerization is conducted.

This is quite different than Applicants' process where one monomer mixture is polymerized to only partial completion, and before the monomers are all consumed, a regulator is added and the monomers left over from the first polymerization are reacted

in a second polymerization to form a second monomer of lower molecular weight than the polymer formed from the first polymerization.

Applicants' conduct two or more sequential polymerizations with one monomer mixture by adding a regulator to the reaction mixture before it is all consumed by the first polymerization to commence a second polymerization with the remaining monomers and produce a second polymer which is different than the first polymer. Brahm, by contrast, conducts two completely separate polymerizations, with separate monomer mixtures using the polymer/solvent mixture formed from the first polymerization as a reaction media for the second polymerization. Conducting several polymerizations with several monomer mixtures, one on top of the other, as in the Brahm reference, is a completely different concept than Applicants' use of one monomer mixture to conduct a plurality of polymerizations, one after the other.

Applicants' process is completely different than anything that can be found in the Brahm reference, and the rejection of claims 1, 3, 4, 6, 7, 9 and 11 under 35 U.S.C. 102(a) as anticipated by (Brahm et al U.S. Patent 6,001,931) should now be withdrawn.

Claims 2, 12 and 13 stand rejected under 35 U.S.C. 103(a) as obvious over Brahm et al. (U.S. 6,001,931) as applied to claims 1, 3, 4, 6, 7, 9 and 11 above and further in view of Williams et al. (U.S. 4,801,523).

The differences between the invention defined by Applicants' claims and anything that could be derived from the Brahm reference are discussed above. The Examiner turns to the Williams reference for a teaching that in general, it is desirable to reach conversions of 95% or greater and preferable conversions of 99.5% or higher. A simple desire to achieve a high conversion cannot possibly compensate for any of the differences between Applicants' invention and anything that could be learned from the Brahm reference, as discussed above, however. A desire for higher conversion rates in combination with the Brahm reference could not therefore possibly render Applicants' claim 2 obvious.

With regard to claims 12 and 13, the Examiner relies on Williams for a teaching to apply an adhesive on one or both sides of a backing. The application of Brahm's composition to two sides of a backing would not in any way overcome any of the differences discussed above however.

The rejection of claims 2, 12 and 13 under 35 U.S.C. 103(a) as obvious over Brahm et al. (U.S. 6,001,931) as applied to claims 1, 3, 4, 6, 7, 9 and 11 above and further in view of Williams et al. (U.S. 4,801,523) should therefore now be withdrawn.

Finally, claims 5, 8 and 10 stand rejected under 35 U.S.C. 103(a) as obvious over Bamm et al. (U.S. 6,001,931) as applied to claims 1, 3, 4, 6, 7, 9 and 11 above and further in view of Baus et al. (U.S. 6,242,518).

The differences between the invention defined by Applicants' claims and anything that could be derived from the Brahm reference are discussed above. The Examiner turns to the Baus reference for a molar ratio of initiator to monomer, for the timing of when to add the regulator, for certain olefinically unsaturated monomers having functional groups. None of this could possibly overcome the differences discussed above, however.

Further, Applicants' have previously pointed out that Baus deals with emulsion polymerization and the products thereof. Such polymerizations are executed in an emulsion of organic solvents in water; the emulsion being realized by adding emulsifiers to the water-solvent-system. The polymerization itself takes place in little drops of solvent that are present in the water matrix.

Applicants, by contrast, deal with a free radical polymerization that takes part in solution, i.e. in an organic solvent (a one-phase system, referred to the physical phases; not to be mixed up with the at least two chronological phases as described in claim 1). In other words, the monomers are simply dissolved in "a pot of" solvent wherein the reaction takes place. Such a system is not disclosed in the Baus reference.

Accordingly, no combination of Brahm and Baus could possibly lead to the invention defined by Applicants' claims, and the rejection of claims 5, 8 and 10 under 35 U.S.C. 103(a) as obvious over Brahm et al. (U.S. 6,001,931) as applied to claims 1, 3,

4, 6, 7, 9 and 11 above and further in view of Baus et al. (U.S. 6,242,518) should now be withdrawn.

In view of the present amendments and remarks it is believed that claims 1 - 13 are now in condition for allowance. Reconsideration of said claims by the Examiner is respectfully requested and the allowance thereof is courteously solicited.

CONDITIONAL PETITION FOR EXTENSION OF TIME

If any extension of time for this response is required, Applicants request that this be considered a petition therefor. Please charge the required petition fee to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fee or credit any excess to Deposit Account No. 14-1263.

Respectfully submitted,
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